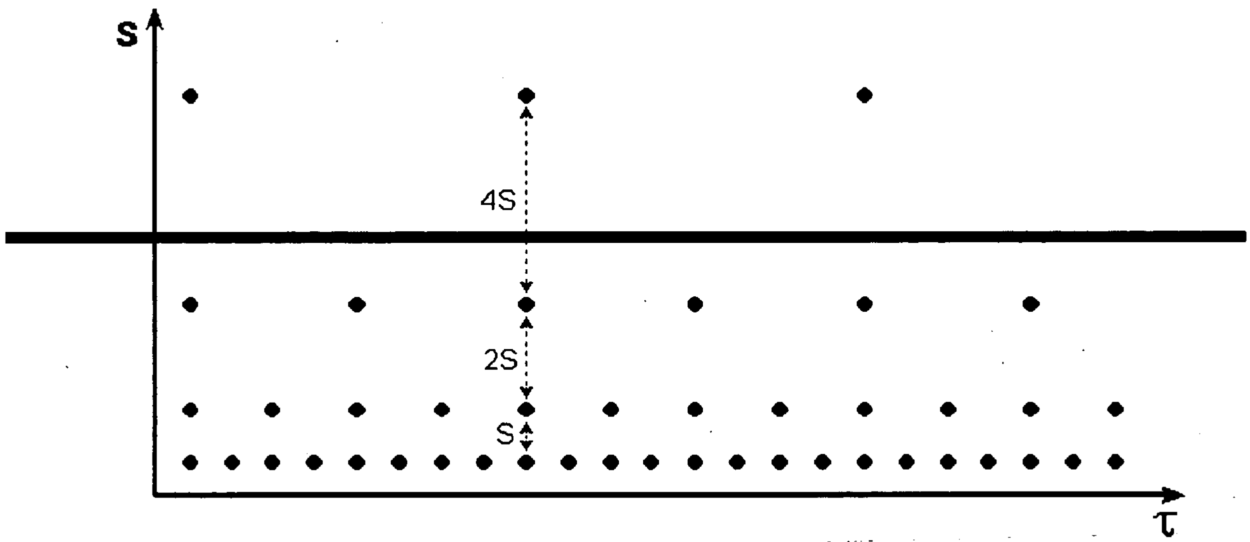
## In the Specification

Please amend as follows:

**Please amend Page 5, lines 4-8, (with the illustration being deleted) as follows:**

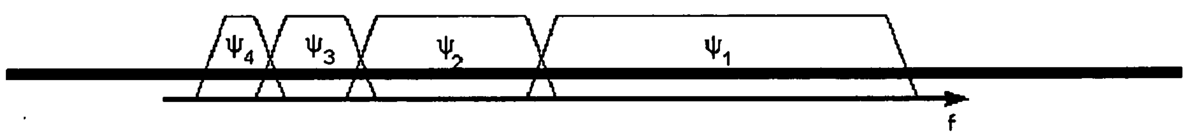
Figure 7 ~~The following~~ illustrates the localization of the discrete wavelets in the time-scale space on a dyadic grid.




An important issue ~~a~~ of decomposition is reconstruction. Signals can be reconstructed from its wavelet series decomposition because the energy of the wavelet coefficients lies between two positive bounds, such that:

**Please amend Page 6, lines 11-22, (with the illustration being deleted) as follows:**

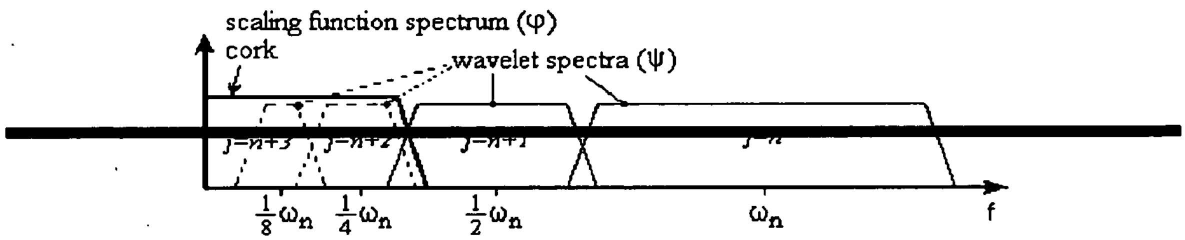
In other words, a time compression of the wavelet by a factor of 2 stretches the frequency spectrum of the wavelet by a factor of 2 and shifts all frequency components up by a factor of 2. Using this, the finite spectrum of a signal is covered with the spectra of dilated wavelets in the same way our signal in the time domain is covered with translated wavelets. To get good coverage of the signal spectrum, the stretched wavelet spectra should touch each other, as shown in Figure 8. This can be arranged by correctly designing the wavelets.




As a result, a series of dilated wavelets can be seen as a band-pass filter bank. The ratio between the center frequency of a wavelet spectrum and the width of this spectrum is the same for all wavelets and is the fidelity factor Q of a filter and, in the case of wavelets, is a constant-Q filter bank.

**Please amend Page 7, lines 9-16, (with the illustration being deleted) as follows:**

Since the scaling function $\Psi(t)$ is selected in such a way that its spectrum is neatly fitted in the space left open by the wavelets, (12) uses an infinite number of wavelets up to a certain scale *j* , as shown in Figure 9.~~:~~

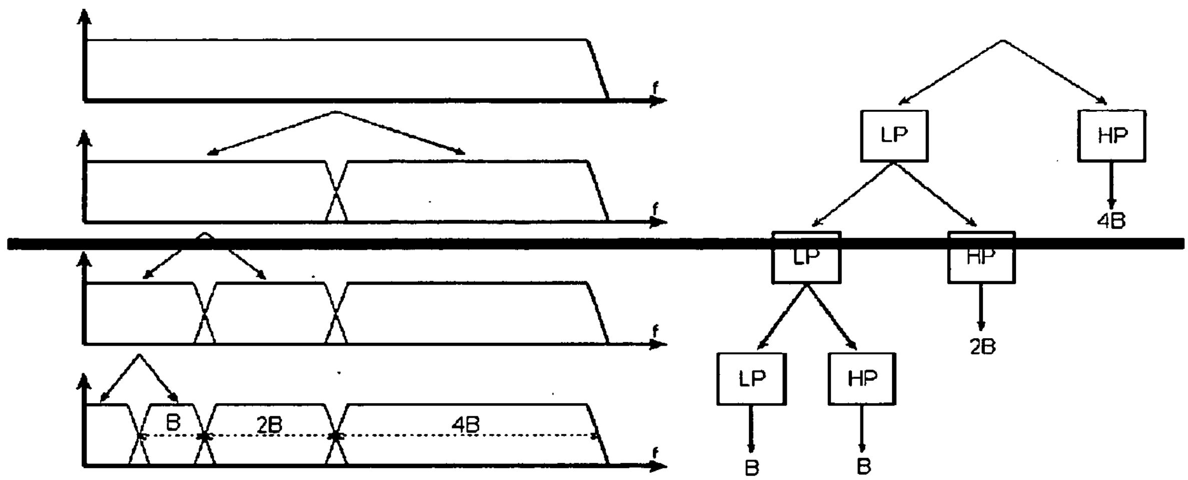



This means that if a signal is analyzed using the combination of scaling function and wavelets, the scaling function by itself takes care of the spectrum otherwise covered by all the wavelets up to scale *j*, while the rest is done by the wavelets themselves. Thus, the number of wavelets reduces to a finite number.

**Patent Application Number: 10/674,048**
**Attorney Docket Number: A2506-US-NP**

**Please amend Page 9, lines 4-17, (with the illustration being deleted) as follows:**

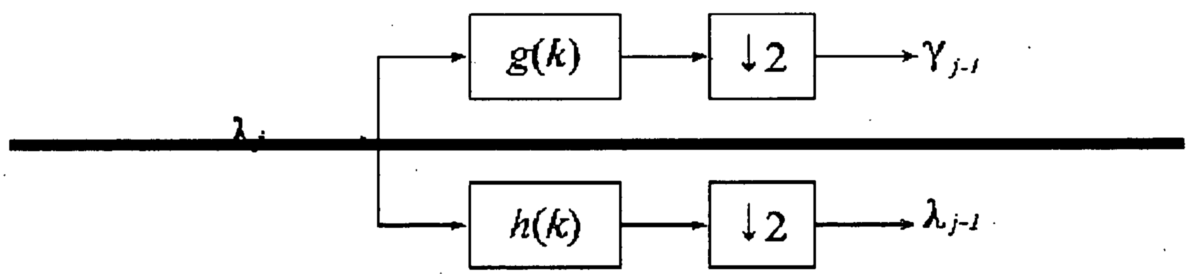
The process of splitting the spectrum is illustrated graphically ~~as:~~ in Figure 10.




What remains after the repeated spectrum splitting is a series of band-pass bands with doubling bandwidth and one low-pass band. (Although in theory the first split produced a high-pass band and a low-pass band, in reality the high-pass band is a band-pass band due to the limited bandwidth of the signal.) The same sub-band analysis is performed by feeding the signal into a bank of band-pass filters of which each filter has a bandwidth twice as wide as his left neighbor (the frequency axis running left to right) and a low-pass filter. The wavelets give the band-pass bands with doubling bandwidth and the scaling function provides the low-pass band. The wavelet transform becomes a sub-band coding schema using a constant-Q filter bank (although not restricted to constant-Q filter banks). If the wavelet transform is implemented as an iterated filter bank, the wavelets do not have to be specified explicitly.

**Please amend Page 12, lines 7-20, (with the illustration being deleted) as follows:**

Every time the filter bank is iterated the number of samples for the next stage is halved. Thus, you are left with just one sample (in the extreme case). This is where the iteration stops. This also determines the width of the spectrum of the scaling function. Normally the iteration stops where the number of samples becomes smaller than the length of the scaling filter or the wavelet filter, whichever is the longest. So the length of the longest filter determines the width of the spectrum of the scaling function. As such, (19) and (20) can be implemented as one stage of an iterated filter bank, ~~such~~ ~~as:~~ illustrated in Figure 11.




Thus, the highly redundant continuous wavelet transform with its infinite number of unspecified wavelets is reduced to a finite stage iterated digital filter bank easily implemented on a computer. Redundancy is removed by using discrete wavelets. A scaling function solves the problem of the infinite number of wavelets needed in the transformation.

**Please amend Page 14, lines 7-10, as follows:**

Figure 1 shows an original striped image and its wavelet transform;

Figure 2 shows an original, as in Figure 1, with its striped image shifted by ½ degrees and its wavelet transform;

Figure 3 shows an original high frequency striped image and its wavelet transform;

Figure 4 shows an original, as in Figure 3, with its high frequency striped image shifted and its wavelet transform;

Figure 5 shows wavelet transformation decomposition (two levels) and subband replacement; ~~and~~

Figure 6 is a flowchart showing converting color images to textured monochrome images;

Figure 7 illustrates the localization of the discrete wavelets in the time-scale space on a dyadic grid;

Figure 8 illustrates an example of a stretched wavelet spectra;

Figure 9 illustrates the scaling function $\varphi(t)$ in such a way that its spectrum is neatly fitted in the space left open by the wavelets;

Figure 10 graphically illustrates the process of splitting the spectrum; and

Figure 11 illustrates one stage of an iterated filter bank.